

Docket No. 511.33114CC6
Serial No. 10/713,036
May 9, 2006

AMENDMENTS TO THE CLAIMS:

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application.

LISTING OF CLAIMS:

1. and 2. (Cancelled).

3. (Previously presented) A photosensitive resin composition according to claim 11, wherein said at least one diamine used in producing said polyimide precursor consists of a diaminopolysiloxane.

4. (Previously presented) A photosensitive resin composition according to claim 11, wherein said transmittance is in a range of 40%-68%.

5. - 9. (Cancelled).

10. (Previously presented) A photosensitive resin composition which comprises (1) a polyimide precursor produced using an oxydiphthalic acid or acid anhydride thereof and at least one diamine as reactants for forming the polyimide precursor, wherein said at least one diamine consists of at least one diamine selected from the group consisting of diaminodiphenyl ether, diaminodiphenyl sulfone, metaphenylene diamine, p-phenylenediamine, p-xylylenediamine, diaminonaphthalene, dimethylbenzidine, dimethoxylbenzidine, diaminodiphenylmethane, diaminodiphenylsulfide, benzophenonediamine, bis{(aminophenoxy) phenyl}sulfone, hexafluoro-bis(aminophenyl)propane, bis{(aminophenoxy)phenyl}propane, dimethyl-diaminophenyl-methane, tetramethyl-

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diaminodiphenylmethane, bis{(aminophenoxy)phenyl} sulfone, bis(aminophenyl)propane and diaminopolysiloxane, (2) an addition-polymerizable compound, and (3) a photoinitiator, and which is adapted to be exposed and developed using an i-line stepper which uses monochromatic light, the polyimide precursor being such that a 20 μ m thick film thereof has a transmittance, at 365nm, of at least 40%.

11. (Original) A photosensitive resin composition according to claim 10, wherein the addition-polymerizable compound is tetraethylene glycol dimethacrylate.

12. (Previously presented) A photosensitive resin composition according to claim 11, wherein said at least one diamine used in producing said polyimide precursor consists of a diaminodiphenyl ether.

13. (Previously presented) A photosensitive resin composition according to claim 10, wherein said at least one diamine used in producing said polyimide precursor consists of a diaminodiphenyl ether.

14. - 16. (Cancelled).

17. (Previously presented) A photosensitive resin according to claim 13, wherein said at least one diamine used in producing said polyimide precursor consists of at least one diamine selected from the group consisting of 4,4'-diaminodiphenyl ether, 2,4'-diaminodiphenyl ether, 3,4'-diaminodiphenyl ether and 3,3'-diamino-diphenyl ether.

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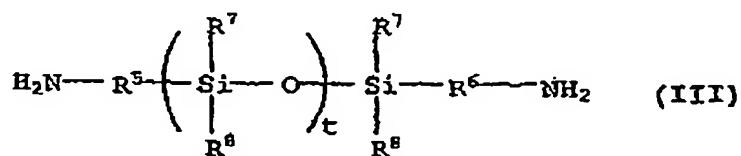
18. (Cancelled).

19. (Previously presented) A photosensitive resin composition according to claim 10, wherein said at least one diamine used in producing said polyimide precursor consists of at least one diamine selected from the group consisting of 4, 4'-diaminodiphenyl ether, 2, 4'-diaminodiphenyl ether, 3, 4'-diaminodiphenyl ether, 3, 3'-diaminodiphenyl ether, 4, 4'-diaminodiphenyl sulfone, 3, 3'-diaminodiphenyl sulfone and metaphenylenediamine.

20. (Previously presented) A photosensitive resin composition according to claim 19, wherein said at least one diamine used in producing said polyimide precursor consists of at least one diamine selected from the group consisting of 3, 4'-diaminodiphenyl ether, 3, 3'-diaminodiphenyl sulfone, 4, 4'-diaminodiphenyl sulfone and metaphenylenediamine.

21. (Previously presented) A photosensitive resin composition according to claim 10, wherein the at least one diamine used in producing said polyimide precursor, consisting of said at least one diamine selected from said group, includes a diaminopolysiloxane represented by the formula (III):

(III):



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wherein R⁵ and R⁶ each represent a divalent hydrocarbon group; R⁷ and R⁸ each represent a monovalent hydrocarbon group; each of R⁵, R⁶, R⁷ and R⁸ may be the same or different; and t represents an integer of 1 to 5.

22. (Previously presented) A photosensitive resin composition according to claim 21, wherein said divalent hydrocarbon group has 1 to 3 carbon atoms, and said monovalent hydrocarbon group has 1 to 3 carbon atoms.

23. (Previously presented) A photosensitive resin composition which comprises (1) a polyimide precursor produced using (a) an oxydiphthalic acid or acid anhydride thereof as a reactant for forming the polyimide precursor, and (b) at least one diamine including a hydroxyl group-containing diamine, (2) an addition-polymerizable compound, and (3) a photoinitiator, and which is adapted to be exposed and developed using an i-line stepper which uses monochromatic light, the polyimide precursor being such that a 20 μ m thick film thereof has a transmittance, at 365 nm, of at least 40%.

24. (Previously presented) A photosensitive resin composition according to claim 10, wherein said polyimide precursor is a condensation product of said oxydiphthalic acid or acid anhydride thereof and said at least one diamine.

25. (Previously presented) A photosensitive resin composition which consists essentially of (1) a polyimide precursor produced using (a) an oxydiphthalic acid or acid anhydride thereof as a reactant for forming the polyimide precursor, and (b) at least one diamine selected from the group consisting of diaminodiphenyl

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sulfone, metaphenylene diamine, p-phenylenediamine, p-xylylenediamine, diaminonaphthalene, dimethylbenzidine, dimethoxylbenzidine, diaminodiphenylmethane, diaminodiphenylsulfide, benzophenonediamine, bis{(aminophenoxy) phenyl}sulfone, hexafluoro-bis(aminophenyl)propane, bis{(aminophenoxy)phenyl}propane, dimethyl-diaminophenyl-methane, tetramethyl-diaminodiphenylmethane, bis{(aminophenoxy)phenyl} sulfone, bis(aminophenyl)propane and diaminopolysiloxane, (2) an addition-polymerizable compound, and (3) a photoinitiator, and which is adapted to be exposed and developed using an i-line stepper which uses monochromatic light, the polyimide precursor being such that a 20 μ m thick film thereof has a transmittance, at 365nm, of at least 40%.

26. (Previously presented) A photosensitive resin composition according to claim 10, which consists essentially of said polyimide precursor, said addition-polymerizable compound, and said photoinitiator, in an organic solvent.

27. (Previously presented) A photosensitive resin composition according to claim 19, which consists essentially of said polyimide precursor, said addition-polymerizable compound, and said photoinitiator, in an organic solvent.

28. (Previously presented) A photosensitive resin composition according to claim 23, wherein said polyimide precursor, said addition-polymerizable compound and said photoinitiator are in a solvent.

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29. (Previously presented) A photosensitive resin composition according to claim 25, wherein said polyimide precursor, said addition-polymerizable compound and said photoinitiator are in a solvent.

30. (Previously presented) A photosensitive resin composition according to claim 10, wherein said polyimide precursor is produced by using said oxydiphthalic acid or acid anhydride thereof and said at least one diamine as reactants, in an organic solvent.

31. (Previously presented) A photosensitive resin composition according to claim 30, wherein said organic solvent is selected from the group consisting of N-methyl-2-pyrrolidone, N,N-dimethylacetamide, N,N-dimethylformamide, dimethylsulfoxide, tetramethylurea, hexamethylphosphoric triamide and γ -butyrolactone.

32. (Previously presented) A photosensitive resin composition according to claim 10, wherein said polyimide precursor has a number average molecular weight of 3,000 to 200,000.

33. (Previously presented) A photosensitive resin composition according to claim 32, wherein said number average molecular weight of said polyimide precursor is 7,000 to 50,000.

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34. (Previously presented) A photosensitive resin composition according to claim 10, wherein said polyimide precursor, said addition-polymerizable compound and said photoinitiator are provided in an organic solvent.

35. (Previously presented) A photosensitive resin composition according to claim 10, wherein composition is a solution of said polyimide precursor, said addition-polymerizable compound and said photoinitiator in said organic solvent.

36. (Previously presented) A photosensitive resin composition according to claim 19, wherein said polyimide precursor, said addition-polymerizable compound and said photoinitiator are provided in an organic solvent.

37. (Previously presented) A photosensitive resin composition according to claim 36, wherein composition is a solution of said polyimide precursor, said addition-polymerizable compound and said photoinitiator in said organic solvent.

38. (New) A photosensitive resin composition according to claim 10, wherein said polyimide precursor is produced using said oxydiphtthalic acid.

39. (New) A photosensitive resin composition according to claim 25, wherein said polyimide precursor is produced using said oxydiphtthalic acid.

40. (New) A photosensitive resin composition according to claim 10, wherein said photoinitiator is selected from the group consisting of Michler's ketone, benzoin methyl ether, benzoin ethyl ether, benzoin isopropyl ether, 2-t-

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butylanthraquinone, 2-ethylanthraquinone, 4,4'-bis(diethylamino)benzophenone, acetophenone, benzophenone, thioxanthone, 2,2-dimethoxy-2-phenylacetophenone, 1-hydroxycyclohexyl phenyl ketone, 2-methyl-[4-(methylthio)phenyl]-2-morpholino-1-propanone, benzil, diphenyldisulfide, phenanthrenequinone, 2-isopropylthioxanthone, riboflavin tetrabutyrate, 2,6-bis(p-diethylaminobenzal)-4-methyl-4-azacyclohexanone, N-ethyl-N-(p-chlorophenyl)glycine, N-phenyl-diethanolamine, 2-(o-ethoxycarbonyl)oxyimino-1,3-diphenylpropanedione, 1-phenyl-2-(o-ethoxycarbonyl)oxyiminopropan-1-one, 3,3', 4,4'-tetra(t-butylperoxycarbonyl)benzophenone, and 3,3'-carbonylbis(7-diethylaminocoumarin).

41. (New) A photosensitive resin composition according to claim 25, wherein said photoinitiator is selected from the group consisting of Michler's ketone, benzoin methyl ether, benzoin ethyl ether, benzoin isopropyl ether, 2-t-butylanthraquinone, 2-ethylanthraquinone, 4,4'-bis(diethylamino)benzophenone, acetophenone, benzophenone, thioxanthone, 2,2-dimethoxy-2-phenylacetophenone, 1-hydroxycyclohexyl phenyl ketone, 2-methyl-[4-(methylthio)phenyl]-2-morpholino-1-propanone, benzil, diphenyldisulfide, phenanthrenequinone, 2-isopropylthioxanthone, riboflavin tetrabutyrate, 2,6-bis(p-diethylaminobenzal)-4-methyl-4-azacyclohexanone, N-ethyl-N-(p-chlorophenyl)glycine, N-phenyl-diethanolamine, 2-(o-ethoxycarbonyl)oxyimino-1,3-diphenylpropanedione, 1-phenyl-2-(o-ethoxycarbonyl)oxyiminopropan-1-one, 3,3', 4,4'-tetra(t-butylperoxycarbonyl)benzophenone, and 3,3'-carbonylbis(7-diethylaminocoumarin).

42. (New) A photosensitive resin composition according to claim 10, wherein the oxydiphthalic acid or acid anhydride thereof is included in total in an

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amount of 20 to 100 mole % based on total amount of acid component of the polyimide precursor.

43. (New) A photosensitive resin composition according to claim 25, wherein the oxydiphthalic acid or acid anhydride thereof is included in total in an amount of 20 to 100 mole % based on total amount of acid component of the polyimide precursor.